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Symposium on "Speciation in Molluscs" at the 75th Annual AMS Meeting

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This issue of the *American Malacological Bulletin* contains six papers from a symposium on "Speciation in Molluscs", held at the 75th annual meeting of the American Malacological Society in Ithaca, New York on 20 July 2009 (Allmon *et al.* 2009). A total of nine papers were presented in the symposium, covering topics from chitons to nudibranchs. The six papers included here represent a considerable portion of this diversity of subject and approach (more than might be suggested by the fact that five of them are about gastropods!).

Rebecca Rundell critically reviews the remarkable life and career of John Thomas Gulick, who was one of malacology's most important early students of speciation. She notes that although modern research has altered some of Gulick's conclusions, we still puzzle as he did about the degree to which natural selection and geographic isolation contribute to species formation. Rob Dillon and John Robinson consider the topic of genetic differentiation *without* (or with only incomplete) speciation, focusing on the maddeningly complex systematics of the freshwater gastropod genus *Goniobasis/Elimia/Pleurocera* in the southern Appalachian region. Patrick Krug presents a review of the literature on speciation in modern marine gastropods and concludes that, counter to what is perhaps the received wisdom, there are abundant cases of non-allopatric speciation. Matthias Glaubrecht presents a wide-ranging review of speciation in modern freshwater gastropods. He concludes that although there is considerable evidence for various forms of sympatric speciation, allopatric speciation should still be used as the "default setting, or null-hypothesis for testing and falsification of non-allopatry by studying ecological and other relevant factors". In the only non-gastropod paper, Paula Mikkelsen surveys the subject of speciation in marine bivalves based on three sets of data from the literature. She reports that new species are still being described at a high rate, mostly from newly-collected material, and that many of these species were produced by relatively subtle processes, such as physiology, rather than (or in addition to) large-scale allopatry. Finally, Ursula Smith and I consider what, and how, the fossil record can tell us about speciation in marine gastropods. Writing this paper taught me a lot about what we still do not know – about both modern and fossil gastropods. We similarly find abundant "subtle" cases of speciation (*i.e.*, cryptic species), and ponder what this and other neontological data mean for our ability to consider causes of speciation using fossils, given the nature of the geological record.

Taken together, these six papers well illustrate some basic facts about the current state of our understanding of speciation: (1) allopatry still rules, but not by much; (2) cryptic species are very numerous and getting more so; (3) marine diversity may be higher than we think; and (4) we know a lot more about speciation than we used to, but not as much as many of us act like we do.

I am most grateful to the American Malacological Society for allowing me the opportunity to host the meeting in Ithaca and to bring together such a distinguished group of contributors to talk about one of my favorite subjects. I am also grateful to Cornell University's Department of Earth and Atmospheric Sciences for co-hosting the meeting with the Paleontological Research Institution. The meeting would not have materialized without the hard work of Kelly Cronin and the constant advice and support of Paula Mikkelsen, to both of whom I am most indebted. Ken Brown and Cynthia Trowbridge were enormously patient in waiting for and editing the manuscripts, and Maya Weltman-Fahs was enormously helpful in pulling all of them together at the end. Finally, I thank the authors who, despite several lengthy delays on my part, produced excellent and interesting manuscripts.

LITERATURE CITED

Allmon, W. D., P. M. Mikkelsen, and K. Cronin, eds. 2009. American Malacological Society 75th Annual Meeting, Program and Abstracts. Paleontological Research Institution, Special Publication No. 37, 96 pp.